AMENDMENTS TO THE CLAIMS

1. (currently amended) A method for non-destructively evaluating a specimen for the presence of subsurface kissing unbond defects, comprising the steps of:

heating the specimen;

applying a force to the specimen, wherein the magnitude of the force is sufficient to exacerbate a thermal discontinuity caused by [a]said subsurface kissing unbond defect, wherein said force is insufficient to cause the subsurface kissing unbond defect to migrate toward a specimen surface ~~of said specimen~~; and

generating an infrared image to detect the presence of a subsurface kissing unbond defect.

2. (Original) The method of claim 1, wherein the applying step includes decreasing air pressure in a vicinity of the specimen to change the at least one dimension of the subsurface defect.

3. (Original) The method of claim 1, wherein the applying step includes disturbing the specimen using ultrasonic, acoustic or mechanical energy.

4. (Original) The method of claim 1, wherein the applying step includes:

placing the specimen in a chamber; and

generating a vacuum in the chamber to change at least one dimension of the subsurface defect.

5. (Original) The method of claim 1, wherein the applying step includes:

placing a sealed enclosure on the surface of the specimen; and

generating a vacuum in the sealed enclosure to change the at least one dimension of the subsurface defect.

6.(Previously Presented) The method of claim 5, wherein the sealed enclosure is divided into two sections such that the vacuum generated in said vacuum generating step produces a vacuum in one of the two sections.

7. (Previously Presented) The method of claim 1, wherein said applying step includes increasing and decreasing the force on the specimen surface, wherein said image generating step includes generating a first thermographic image when the force is increased and generating a second thermographic image when the force is decreased, and wherein the method further comprises the step of comparing the first and second thermographic images to detect the subsurface defect.

8. (Previously Presented) The method of claim 7, wherein the image generating step generates a plurality of first thermographic images and a plurality of second thermographic images over time, and wherein the comparing step is conducted by calculating the difference of the sums of the first thermographic images and the second thermographic images.

9. (Previously Presented) The method of claim 7, wherein the image generating step generates a plurality of first thermographic images and a plurality of second thermographic images over time. and wherein the comparing step includes generating histograms corresponding to the plurality of first and second thermographic images and comparing the histograms for the plurality of first thermographic images with the histograms for the plurality of second thermographic images.

10. (Previously Presented) The method of claim 7, wherein the image generating step generates a plurality of first thermographic images and a plurality of second thermographic images over time, and wherein the comparing step includes mathematically correlating the plurality of first thermographic images with the plurality of second thermographic images.

11. (Previously Presented) The method of claim 7, wherein the image generating step generates a plurality of first thermographic images and a plurality of second thermographic images over time, and wherein the comparing step includes viewing an image corresponding to the ratio between the plurality of the first thermographic images and the plurality of the second thermographic images.

12. (Previously Presented) The method of claim 7, wherein the image generating step generates a plurality of first thermographic images and a plurality of second thermographic images over time, and wherein the comparing step includes visually comparing the plurality of first thermographic images and the plurality of second thermographic images.

13. (Previously Presented) The method of claim 7, wherein the applying step includes placing the specimen in a chamber before said image generating step.

14. (Previously Presented) The method of claim 7, wherein the applying step includes placing a sealed enclosure on the specimen surface before said image generating step.

15. (Previously Presented) A method for non-destructive evaluation of a specimen, comprising the steps of:

heating the specimen;

placing a sealed enclosure on a surface of the specimen;

applying a vacuum to at least a portion of the surface of the specimen by decreasing the air pressure in the sealed enclosure, wherein the vacuum from the applying step enlarges at least one dimension of the subsurface defect to create a thermal discontinuity; and

generating an infrared image to detect the presence of a subsurface defect.

16. (Original) The method of claim 15, wherein the sealed enclosure is divided into two sections such that the vacuum generated in said applying step produces a vacuum in one of the two sections.

17. (Original) The method of claim 15, wherein said applying step further includes the step of increasing the air pressure in the sealed enclosure, wherein said generating step includes generating a first active thermographic image when the pressure is increased and generating a second active thermographic image when the pressure is decreased, and wherein the method further comprises the step of comparing the first and second active thermographic images to detect the subsurface defect.

18. (currently amended) An apparatus for non-destructively evaluating a specimen for the presence of subsurface kissing unbond defects comprising:

a heat-sensitive image generator that generates thermographic images;

a heater that increases the temperature of the specimen; and

means for applying a force to the specimen, wherein the force applied by the applying means is sufficient to change ~~changes~~ at least one dimension of [a]the subsurface kissing unbond defect ~~in the specimen~~ to create a thermal discontinuity, wherein the force applied by the applying means is insufficient to cause the subsurface kissing unbond defect to migrate toward a specimen surface.

19. (Original) The apparatus of claim 18, wherein said heater is at least one flashlamp that directs heat to the specimen surface.

20. (Previously Presented) The apparatus of claim 18, wherein said applying means includes:

a sealed enclosure that is placed on the specimen's surface; and

a vacuum pump that generates a vacuum inside the sealed enclosure.

22. (Original) The apparatus of claim 20, wherein the heater is a flashlamp disposed inside the sealed enclosure to direct light to the specimen surface.

23. (Previously Presented) The apparatus of claim 18, wherein said applying means includes:

a chamber for holding the specimen; and

a vacuum pump that generates a vacuum inside the chamber.

24. (Previously Presented) A method for non-destructively evaluating a specimen for the presence of kissing unbond defects, comprising the steps of:

heating the specimen;

applying a force to the specimen, wherein the magnitude of the force is sufficient to exacerbate a thermal discontinuity caused by a subsurface kissing unbond defect of said specimen; and

generating an infrared image to detect the presence of a subsurface kissing unbond defect, wherein the applying step includes disturbing the specimen using ultrasonic or acoustic energy.

25. (Original) The apparatus of claim 23, wherein the chamber includes a window, wherein the heater is a flashlamp located inside the chamber and directs light on the specimen to heat the specimen, and wherein at least part of the image generator is located outside the chamber.

26. (Original) The apparatus of claim 23, wherein at least one of the heater and the image generator are located inside the chamber.

27. (Original) The apparatus of claim 18, wherein said heater is a lamp that continuously directs heat to the specimen, and wherein said applying means includes an attachment that couples to the surface of the specimen to apply the force.

28. (Original) The apparatus of claim 27, wherein said attachment provides the force via ultrasonic, acoustic, or mechanical energy.

29. (Cancelled)